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		Nd (wt%)	Pr (wt%)	Dy (wt%)	Nd Pr Dy TOTAL R B Al Co Cu Fe (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	MIXTURE	REMARKS
EVANDIE 1	LOW R ALLOY	26.4	5.5	ı	31.9	1.06	0.2	ı	ı	bal.	92	HEAVY RARE EARTH
EAAMITE	HIGH R ALLOY	ı	ı	60.2	60.2	. I	0.2	10.2	1.4	bal.	5	ELEMEN I (DY) CONTAINED IN HIGH R ALLOY
EVAMBLE	LOW R ALLOY	25.3	5.7	ı	31.0	1.12	0.2	ı	ı	bal.	06	HEAVY RARE EARTH
	HIGH R ALLOY	29.2	0.1	30.3	59.6	ı	0.2	5.0	0.7	bal.	10	ELEMEN I (DY) CONTAINED IN HIGH R ALLOY
COMPARATIVE	LOW R ALLOY	22.0	5.8	3.4	31.2	1.12	0.2	I	ı	bal.	06	HEAVY RARE EARTH
EXAMPLE 1	HIGH R ALLOY	29.0	0.2	ı	29.2	. 1	0.2	5.0	0.7	bal.	10	ELEMEN I (Dy) CONTAINED IN LOW R ALLOY
COMPARATIVE	LOW R ALLOY	24.1	5.5	3.2	32.8	1.06	0.2	ı	1	bal.	95	HEAVY RARE EARTH
EXAMPLE 2	HIGH R ALLOY	59.6	0.2	1	59.8	. 1	0.2	10.2	1.4	bal.	. 2	ELEMENT (DY) CONTAINED IN LOW R ALLOY

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	PΝ	Pr	Dy	Dy TOTAL R	В	A	ပိ	η	Fe	Br	He
	(wt%)	(wt%) (wt%) (wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (kg)	(wt%)	(kG)	(k0e)
EXAMPLE 1	25.1	5.2	3.0	33.3	1.0	0.2	0.5	0.1	bal.	12.90 23.09	23.09
EXAMPLE 2	25.7	5.1	3.0	33.8	1.0	0.2	0.5	0.1	bal.	12.78 23.12	23.12
COMPARATIVE EXAMPLE 1	25.6	5.2	3.1	33.9	1.0	0.2	0.5	0.1	bal.	12.51 23.18	23.18
COMPARATIVE EXAMPLE 2	25.9	5.2	3.0	34.1	1.0	0.2	0.5	0.1	bal.	12.50 23.17	23.17

FIG. 2

FIG. 3A

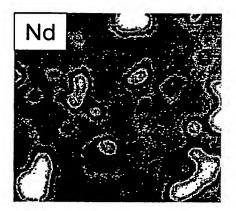


FIG. 3B

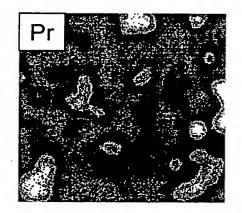


FIG. 3C

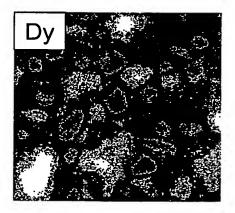


FIG. 3D

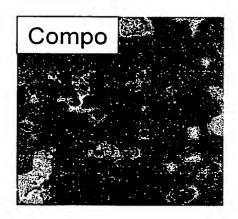


FIG. 4A

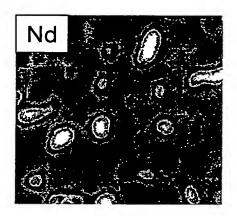


FIG. 4B

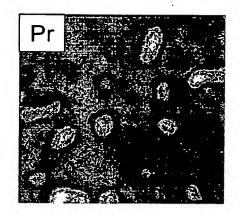


FIG. 4C

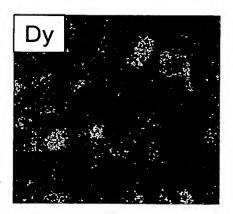
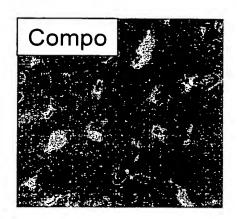


FIG. 4D



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	AVE(X)	λ	AVE(X)/Y	(X/Y) min	(X/Y) max	AVE(X) / Y (X/Y) min (X/Y) max (X/Y) min
EXAMPLE 1	7.58	9.01	0.84	0.12	1.43	11.92
EXAMPLE 2	80'8	888	0.91	0.15	1.33	8.87
COMPARATIVE EXAMPLE 1	10.14	9.14	1.11	1.01	1.25	1.24
COMPARATIVE EXAMPLE 2	10.21	8.80	1.16	1.05	1.27	1.21

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	PΝ	Pr	Dy	TOTAL R	В	IA	Co	Co	Fe	Br	Ho
	(wt%) (wt%)	(wt%)	(wt%)	(wt%) (wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (kG)	(wt%)	(wt%)	(wt%)	(kG)	(k0e)
EXAMPLE 1 25.1	25.1	5.2	3.0	33.3	1.0	0.2	6.0	0.1	bal.	12.90	23.09
EXAMPLE 3 25.0	25.0	5.2	3.0	33.2	1.0	0.2	0.5	0.1	bal.	12.91	22.83
EXAMPLE 4 25.4	25.4	5.1	3.1	33.6	1.0	0.2	6.0	0.1	bal.	12.89	22.22
EXAMPLE 5	25.1	5.2	3.1	33.4	1.0	0.2	0.5	0.1	bal.	13.04 21.14	21.14

FIG. (

	AVE(X)	>	AVE(X)/Y	(X/Y) min	(X/Y) max	AVE(X) / Y (X/Y) min (X/Y) max / (X/Y) min	
EXAMPLE 1	7.58	9.01	0.84	0.12	1.43	11.92	
EXAMPLE 3	7.50	9.04	0.83	0.22	1.32	0.00	
EXAMPLE 4	7.87	9.22	98.0	0.18	1.37	7.61	•
EXAMPLE 5	8.35	9.27	0.89	0.16	1.53	9.56	

FIG. 8

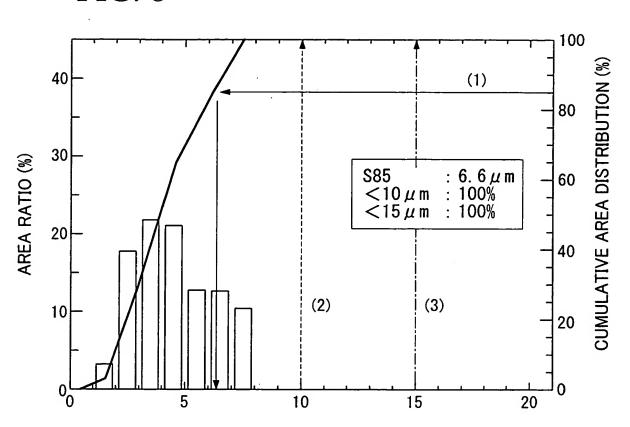
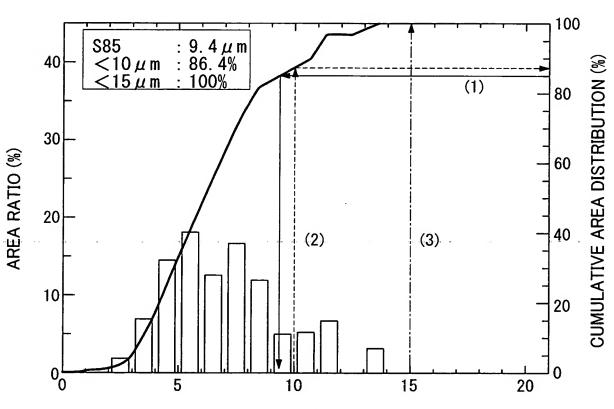


FIG. 9



GRAIN SIZE: EQUIVALENT DIAMETER (μ m)

FIG. 10

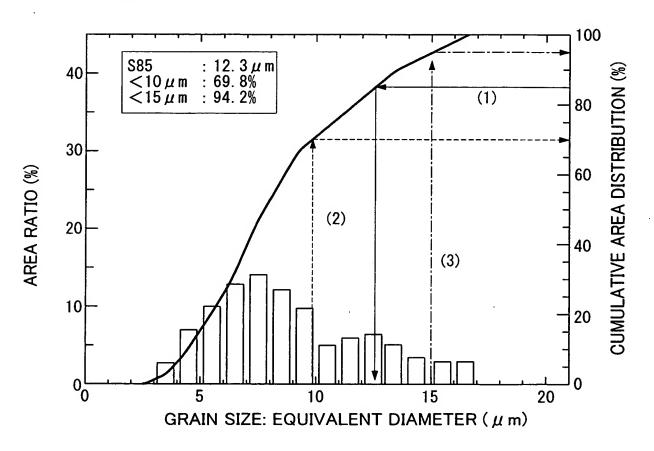
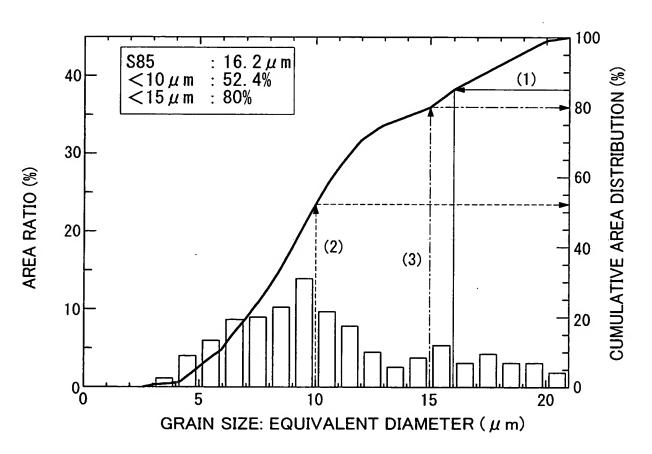


FIG. 11



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	NED.		<u> </u>		į		Ď	
REMARKS	HEAVY RARE EARTH ELEMENT (D _V) CONTAINED	IN HIGH R ALLOY AND IN LOW R ALLOY	HEAVY RARE EARTH ELEMENT (Dy) CONTAINED	IN HIGH R ALLOY AND IN LOW R ALLOY	HEAVY RARE EARTH	IN LOW R ALLOY	HEAVY RARE EARTH ELEMENT (Dy) CONTAINED	IN HIGH R ALLOY AND IN LOW R ALLOY
MIXTURE	95	2	95	2	06	10	80	20
Fe (wt%)	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.
Cu (wt%)	ı	2.0	ı	2.0	1	1.0	1	0.5
Co (wt%)	l	10.0	ı	10.0	-	5.0	1	2.5
Al (wt%)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
B (wt%)	1.06		1.06	1	1.12	1	1.28	-
Dy TOTAL R (wt%) B Al Co (wt%) Cu Fe (wt%) (wt%) (wt%) (wt%) (wt%) (wt%)	31.6	46.0	31.6	46.0	29.5	29.0	29.0	46.0
Dy (wt%)	4.1	46.0	2.2	46.0	7.1	1	4.0	6.5
Nd Pr (wt%) (wt%)	ı	1	ı	l	1	ı	-	0.9
Nd (wt%)	27.5	t	29.4	l	22.4	59.0	25.0	33.5
	LOW R ALLOY	HIGH R ALLOY	LOW R ALLOY	HIGH R ALLOY	LOW R ALLOY	HIGH R ALLOY	LOW R ALLOY	HIGH R ALLOY
	EXAMDI E &		EXAMDI E 7		COMPARATIVE	EXAMPLE 3	COMPARATIVE	EXAMPLE 4

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	PN	Pr	Dy	TOTAL R	В	₹	ပိ	Cu	TI @	ğ	Но
	(wt%)	(wt%) (wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (kg)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(kG)	(k0e)
EXAMPLE 6 26.0	26.0	l	6.2	32.2	1.0	0.2	0.5	0.1	bal.	12.60	25.00
EXAMPLE 7	27.8	l	4.4	32.2	1.0	0.2	0.5	0.1	bal.	13.00	23.62
COMPARATIVE EXAMPLE 3	25.9	l	6.3	32.2	1.0	0.2	0.5	0.1	bal.	12.31	25.00
COMPARATIVE EXAMPLE 4	26.6	1.2	4.5	32.3	1.0	0.2	0.5	0.1	bal.	12.60	23.60

FIG. 14A

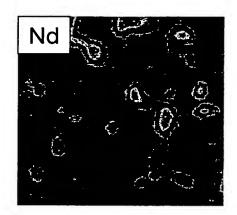


FIG. 14B

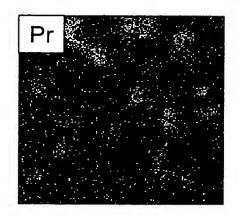


FIG. 14C

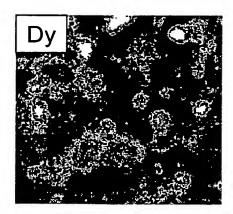


FIG. 14D

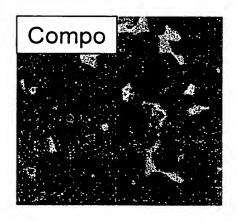


FIG. 15A

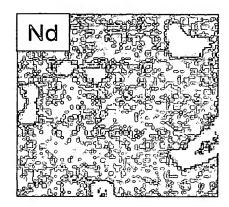


FIG. 15B

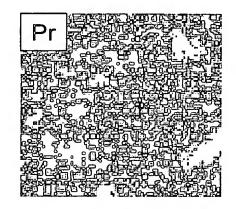


FIG. 15C

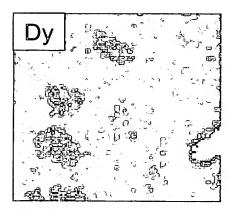
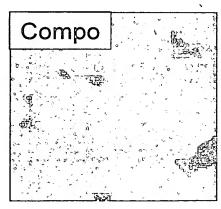


FIG. 15D



	AVE(X)	>	AVE(X) /Y	(X/Y) min	(X/Y)max	AVE(X) / Y (X/Y) min (X/Y) max (X/Y) min
EXAMPLE 6	16.54	19.25	0.85	0.40	1.04	2.60
EXAMPLE 7	13.14	13.66	0.96	0.51	1.12	2.20
COMPARATIVE EXAMPLE 3	20.74	19.57	1.06	0.88	1.31	1.49
COMPARATIVE EXAMPLE 4	15.70	14.98	1.05	0.73	1.33	1.82

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	S50 (µm)	S85 (μμ)	<10 µ m (%)	<15 µ m (%)
EXAMPLE 6	8.29	12.1	64.6	100
EXAMPLE 7	9.90	14.6	50.4	88.1
COMPARATIVE EXAMPLE 3	10.37	17.4	24.6	69.0
COMPARATIVE EXAMPLE 4	12.48	16.3	32.1	75.1

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		1	•		Γ			<u>(/)</u>	-			
REMARKS		HEAVY RARE	ELEMENT (Dy)	CONTAINED IN HIGH R ALLOY	HEAVY RARE	ELEMENT (Dy)	CONTAINED IN HIGH R ALLOY	AT 30% OR LESS BY WEIGHT	HEAVY RARE	ELEMENT (Dy)	CONTAINED IN LOW R ALLOY	
MIXTURE	RATIO	75	20	5	09	31	7	2	09	31	7	2
F ₀	(wt%)	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.	bal.
Ω	(wt%) (wt%) (wt%) (wt%)	ı	ı	1.4	1	ı	0.7	1.4	ı	ł	0.7	1.4
ပိ	(wt%)	1	1	10.0	ı	ı	5.0	10.0	t	1	5.0	10.0
₹	(wt%)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
B	(wt%)	1.06	1.06	-	1.12	1.06	ı	ı	1.12	1.06	. 1	I
TOTAL R	(wt%)	32.5	0.0	0.09	32.0	32.5	0.09	0.09	32.0	32.6	0.09	0.09
٥	(wt%)	ı	1	0.09	-	7.5	1	44.0	_	9.7	-	1
Ą	(wt%) (wt%)	5.6	5.6	ı	5.7	5.4	-	-	5.7	5.4	-	-
PZ	(wt%)	26.9	29.9	1	26.3	19.6	0.09	16.0	26.3	17.5	0.09	0.09
		LOW R ALLOY	LOW R ALLOY	HIGH R ALLOY	LOW R ALLOY	LOW R ALLOY	HIGH R ALLOY	HIGH R ALLOY	LOW R ALLOY	LOW R ALLOY	HIGH R ALLOY	HIGH R ALLOY
			EXAMPLE 8			COMPARATIVE	EXAMPLE 5			COMPARATIVE	EXAMPLE 6	

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	PΝ	Pr	Dy	Dy TOTAL R	В	A	ပိ	CO	Fe	Ŗ	HoJ
	(wt%)	(wt%) (wt%)	(wt%)	(wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (kG) (kG)	(wt%)	(wt%)	(wt%)	(wt%)	(wt%)	(kG)	(k0e)
EXAMPLE 8	26.2	5.3	3.0	34.5	1.0	0.2	0.5	0.1	bal.	12.68	23.68
COMPARATIVE EXAMPLE 5	26.2	5.1	3.2	34.5	1.0	0.2	0.5	0.1	bal.	12.65 22.60	22.60
COMPARATIVE EXAMPLE 6	26.3	5.1	3.0	34.4	1.0	0.2	0.5	0.1	bal.	12.66 22.44	22.44

FIG. 20A

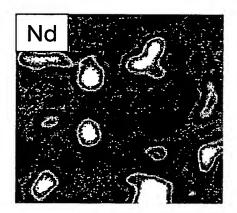


FIG. 20B

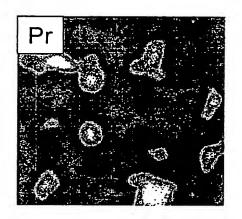


FIG. 20C

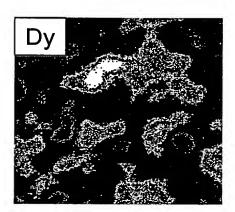


FIG. 20D

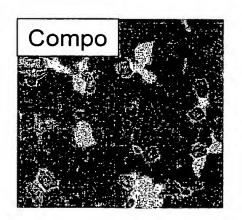


FIG. 21A

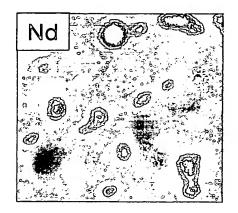


FIG. 21B

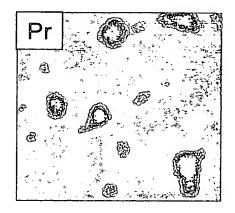


FIG. 21C

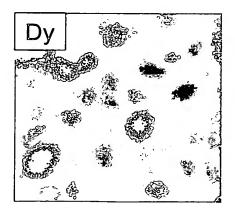
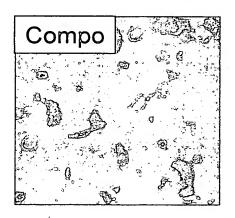
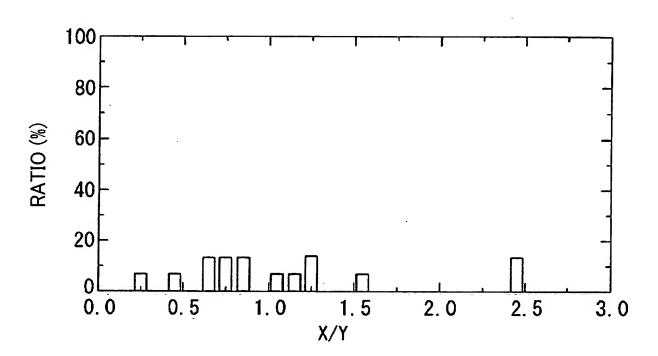


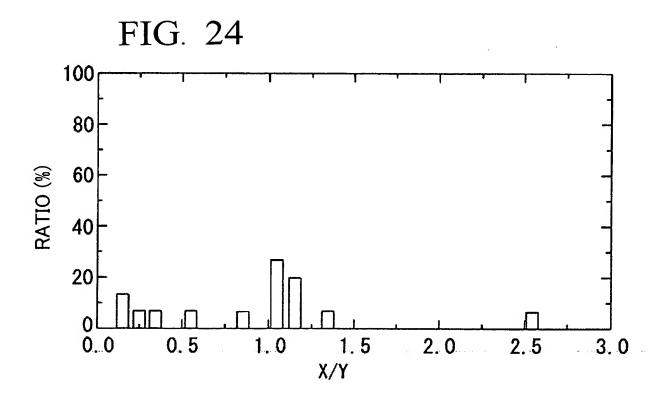
FIG. 21D



	AVE(X)	>	AVE(X)/Y	(X/Y) min	(X/Y) max	AVE(X) / Y (X / Y) min (X / Y) max (X / Y) min
EXAMPLE 8	7.40	8.70	0.85	0.20	1.31	6.55
COMPARATIVE EXAMPLE 5	9.70	8.75	1:1	0.21	2.43	11.57
COMPARATIVE EXAMPLE 6	8.25	8.72	0.95	0.16	2.60	16.25

FIG. 23





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		Nd (wt%)	Tb (wt%)	TOTAL R (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	(MIXTURE RATIO)
	LOW R ALLOY	30.3	1	30.30	1.06	0.2	1	ı	bal.	70
EXAMPLE 9	LOW R ALLOY	24.6	2.7	30.30	1.06	0.2	ı	ı	bal.	25
	HIGH R ALLOY	1	46.0	46.00	1	0.2	10.0	2.0	bal.	2
	LOW R ALLOY	30.3	ı	30.30	1.06	0.2	ı	ı	bal.	09
EXAMPLE10	LOW R ALLOY	26.3	4.0	30.30	1.06	0.2	1	ı	bal.	35
	HIGH R ALLOY	ı	46.0	46.00	ı	0.2	10.0	2.0	bal.	2
COMPARATIVE	LOW R ALLOY	26.4	3.9	30.30	1.06	0.2	1	1	bal.	95
EXAMPLE 7	HIGH R ALLOY	46.0	1	46.00	-	0.2	10.0	2.0	bal.	5
i i	LOW R ALLOY	27.1	3.1	30.20	1.06	0.2	ı	ı	bal.	55
COMPARATIVE EXAMPLE 8	LOW R ALLOY	25.3	5.0	30.30	1.06	0.2	1	1	bal.	40
	HIGH R ALLOY	46.0	1	46.00	i	0.2	10.0	2.0	bal.	5

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	Nd (wt%)	Tb (wt%)	Nd Tb TOTAL R B Al Co Cu Fe Br (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (kt%) (kt%)	B (wt%)	Al (wt%)	Co (wt%)	Cu (wt%)	Fe (wt%)	Br (kG)	HcJ (kOe)
EXAMPLE 9	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal. 13.45	13.45	24.1
EXAMPLE 10 27.3	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal.	bal. 13.43	24.2
COMPARATIVE EXAMPLE 7	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal.	bal. 13.19	24.4
COMPARATIVE EXAMPLE 8	27.3	3.7	31.0	1.0	0.2	0.5	0.1	bal.	13.20	24.7

	AVE(X)	>	AVE(X)/Y	(X/Y) min	(X/Y)max	AVE(X)/Y $(X/Y)min$ $(X/Y)max/(X/Y)min$
EXAMPLE 9	10.47	11.90	0.88	0.21	1.23	5.86
EXAMPLE 10 11.18		11.90	0.94	0.56	1.54	2.75
COMPARATIVE EXAMPLE 7	14.52	11.90	1.22	0.95	1.42	1.49
COMPARATIVE EXAMPLE 8	15.59	11.90	1.31	1.04	1.37	1.32

<15 µ m (%) 98.9 100 100 100 <10 µ m (%) 75.3 90.2 100 100 S85 (μm) 10.96 5.85 6.90 8.51 S50 (µm) 7.67 4.49 5.08 COMPARATIVE EXAMPLE 8 COMPARATIVE **EXAMPLE 10 EXAMPLE 9 EXAMPLE 7**

FIG. 28

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		Nd (wt%)	Dy (wt%)	TOTAL R (wt%)	B (wt%)	Al (wt%)	Co (wt%)	Co Cu Fe (wt%) (wt%)	Fe (wt%)	(MIXTURE RATIO)
EXAMDI E11	LOW R ALLOY	27.4	1	27.40	1.06	0.3	,	1	bal.	95
	HIGH R ALLOY	1	40.0	40.00	ı	0.3	10.0	2.0	bal.	5
EYAMDI E 10	LOW R ALLOY	34.7	1	34.70	1.06	0.2	ı	1	bal.	95
	HIGH R ALLOY	1	60.0	00.09	ı	0.2	30.0	2.8	bal.	5
COMPARATIVE	COMPARATIVE LOW R ALLOY	25.3	2.1	27.40	1.06	0.2	1	1	bal.	95
EXAMPLE 9	HIGH R ALLOY	40.0	_	40.00	ı	0.2	10.0	2.0	bal.	2
COMPARATIVE	COMPARATIVE LOW R ALLOY	31.5	3.2	34.70	1.06	0.2	1	1	bal.	95
EXAMPLE 10	EXAMPLE 10 HIGH R ALLOY	0'09	1	00'09	1	0.2	30.0	2.8	bal.	5

	Nd (wt%)	Nd Dy T((wt%) (wt%)	Dy TOTAL R B AI Co Cu Fe (wt%) (wt%) (wt%) (wt%) (wt%) (wt%) (wt%)	B (wt%)	AI (wt%)	Al Co (wt%) (wt%)	Cu (wt%)	Fe (wt%)	Br HcJ (kGe)	HcJ (kOe)
EXAMPLE11	26.0	2.0	28.0	1.0	0.3	0.5	0.1	bal.	bai. 14.2 12.2	12.2
EXAMPLE12	33.0	3.0	36.0	1.0	0.2	1.5 0.14	0.14	bal.	12.1	25.3
COMPARATIVE EXAMPLE 9	26.0	2.0	28.0	1.0	0.2	0.5	0.1	bal.	13.8	12.6
COMPARATIVE EXAMPLE 10	33.0	3.0	36.0	1.0	0.2	1.5	1.5 0.14	bal.	bal. 11.7 25.5	25.5

	AVE(X) Y	\	AVE(X)/Y	(X/Y) min	(X/Y) max	AVE(X)/Y = (X/Y)min = (X/Y)max/(X/Y)min
EXAMPLE 11	6.40	7.10	06:0	0.41	1.34	3.27
EXAMPLE 12 7.72	7.72	8.30	0.93	0.33	1.36	4.12
COMPARATIVE EXAMPLE 9	7.81	7.10	1.10	0.91	1.15	1.26
COMPARATIVE EXAMPLE 10	10.29	8.30	1.24	0.94	1.21	1.29